Triumph, Tradegy or Tradeoff?

Considering the Impact of Gambling

August 2001

Executive Summary

Background

Gambling in Canada generated $5.5 billion in net profit for the provinces and territories in 2000, and revenues have grown in size every year since 1992. With the revenue generated by this expansion, governments have provided opportunities for economic development and employment growth, lowered taxes, paid down debt, funded social programs and provided entertainment opportunities. Gambling expansion can also increase the negative aspects of gambling including higher levels of gambling addiction, bankruptcy, lower job productivity, family and marital stress, and crime. The amount of damage that has been created by this increase in gambling is unknown. The speed at which gambling expanded in Canada has raised concerns about whether due care is being taken in the development of provincial gambling policy. This paper considers the impacts of gambling and addresses the many obstacles surrounding the collection of relevant data, obstacles that hinder our ability to conclude whether gambling expansion is good or bad for Canada.

Key Findings

- The current inability to assess gambling's impact fundamentally clogs the process of developing gambling policy. An understanding of the impact of gambling's expansion is a prerequisite to the development of appropriate policy.

- Research studies have been unable to provide a comprehensive answer to gambling's impact for two reason. First, attributing most gambling related impacts (stress, job loss, entertainment) to the actual act of gambling has proven extremely difficult. Second, even if researchers find costs and benefits that can be linked back to gambling, their ability to value these costs and benefits against one another becomes problematic.

- A public health approach to measuring gambling's impact addresses the problems of valuing the cost of gambling by focusing research on what should be the primary goal of gambling policy: to maximize the benefit of gambling while minimizing the harm.

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Implications for Policy Development

- In order to better understand how gambling impacts communities, efforts to collect data need to increase. Our knowledge of the socio-economic impacts of gambling is limited due in part to the fact that an active, transparent and uniform attempt to collect data throughout all regions has not been initiated. Provincial gaming authorities should be given the mandate and resources to collect gambling-relevant data at regular and consistent intervals.

- Data collected should be publicly available for independent analysis so that all stakeholders in regions that are impacted by the expansion of gambling are better informed of the costs and benefits. This will allow communities to make decisions based on their own unique values. A greater awareness of the benefits and costs of gambling would also provide citizens with an opportunity to guide their responses to public referenda and gambling policy reviews.

- While some data do exist to measure the effects of gambling on communities, it is important to realize their limitations. At best, currently available data can be a valuable tool to help identify policy areas that warrant additional research. They should not be considered as wholly predictive or explanatory.

- It is important that the success of policies and effects of gambling are reviewed on a continual basis after gambling has been introduced to a community. Changes in community and economic data and social indicators after gambling has been established in a region should be noted and regularly evaluated. Once gambling has expanded, the direction of future policy should not be seen as wholly irreversible or inevitable. The direction of future policy may be dependent on whether gambling has satisfied the community health goals established when gambling was originally introduced.

Methodology

The information contained within this report came through a detailed review of the Canadian and international gambling research literature, conference summaries, exisiting gambling impact studies and national gambling policy reviews in Australia and the United States.

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GAMBLING IN CANADA

TRIUMPH, TRAGEDY OR TRADE-OFF?

CONSIDERING THE IMPACT OF GAMBLING

by
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Senior Policy Analyst

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AUGUST 2001

CANADA WEST FOUNDATION

ABOUT THE GAMBLING IN CANADA PROJECT

Gambling in Canada: Triumph, Tragedy or Tradeoff? is an independent national study of gambling in Canada. Funded by a number of philanthropic foundations including the Donner Canadian Foundation, the 3-year Gambling in Canada Project ends in October 2001. Emerging from public debates about the expansion of gambling, the project was designed to provide a much-needed comprehensive picture of the public policy issues surrounding gambling in Canada. Four overarching research areas are being explored:

(1) the impact of gambling on the non-profit sector;

(2) opinions, attitudes and public policy implications of gambling;

(3) the history and scope of gambling in Canada; and

(4) the socio-economic impact of gambling on communities.

The Canada West Foundation's Gambling in Canada Project is not supported by any government, the gambling industry, special interest groups, or individuals with known positions on gambling issues. The research objectives and output of the project is overseen by a Project Advisory Committee to ensure the accuracy and objectivity of the research.

Copies of the latest research are available by contacting the Canada West Foundation. For information on the current activities of the Gambling in Canada Project, please contact:

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Gambling in Canada Research Report No. 14

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ISBN #1-895992-13-3

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INTRODUCTION

Gambling in Canada generated $5.5 billion in net profit for the provinces and territories in 2000, and revenues have grown in size every year since 1992. Over the last eight years, gross gambling profits have grown more than threefold–from $2 734 million in 1992 to $9,040 million in 2000. To feed this growth, 59 casinos have opened, 31,000 slot machines were introduced, and 38,000 video lottery terminals have been installed in bars and lounges since 1989 (Azmier, 2001). With the revenue generated by this expansion, governments have provided opportunities for economic development and employment growth, lowered taxes, paid down debt, funded social programs and provided entertainment opportunities.

Despite the emergence of an aggressive public debate, there has not been a substantial body of research outlining the costs and benefits of expanded gambling in Canada.

Gambling has expanded at a rate well beyond the research community's ability to monitor or assess consequences.

The speed at which gambling expanded in Canada has raised concerns about whether due care is being taken in the development of provincial gambling policy. Gambling expansion can increase the negative aspects of gambling including higher levels of gambling addiction, bankruptcy, lower job productivity, family and marital stress, and crime. The amount of damage that has been created by this increase in gambling is unknown. Gambling expanded so quickly in the 1990s that there was little time to consider the impact of one change before another policy was announced.

To address this knowledge gap, the Canada West Foundation launched a three-year study in September 1998. This project was designed to provide a much-needed comprehensive picture of many of the public policy issues surrounding gambling in Canada. Four overarching research areas were explored: (1) the impact of gambling on the non-profit sector; (2) opinions, attitudes and public policy implications of gambling; (3) the history and scope of gambling in Canada; and (4) the socio-economic impact of gambling on communities. This paper addresses the final component–the impact of gambling.

WHY MEASURE GAMBLING IMPACTS?

Gambling policy is a contentious and high profile public issue in Canada. Gambling policy involves elements of business, tourism, employment, social service delivery, regulation, religious beliefs, and cultural heritage. Members of the Canadian media admit to being drawn to gambling stories because they contain all the elements of a classic news story: human interest, money, and possible government mismanagement (Azmier, et al., 1998). Yet, despite the emergence of an aggressive public debate, there has not been a substantial body of research outlining the costs and benefits of expanded gambling in Canada. Gambling has expanded at a rate well beyond the research community's ability to monitor or assess consequences.

As a result, the Canadian public remains largely indifferent or unsure on issues related to the benefits or costs of gambling. A 1999 national public opinion survey by Canada West found that a strong majority of Canadians report neither a positive nor negative impact from gambling on

themselves or their communities (Azmier, 2000). The increased public debate of the merits of gambling would appear to have done little to inform public perceptions about the harm or benefit of aggressive gambling expansion. The public debate has increased in vigour, but not in substance.

The "substance" that the public debate lacks could come from the answers to some very basic questions about gambling expansion. For example:

1. What are the specific social, economic, and quality of life benefits for individuals and the community from expanded gambling opportunities?
2. To whom do these new benefits primarily accrue?
3. Are the benefits of increased gambling sustainable and renewable?
4. What is the impact of gambling expansion on existing gambling and other forms of commerce in a region?
5. What are the social, economic, and quality of life costs for individuals and communities associated with expanded gambling opportunities?
6. To whom do these new costs accrue?
7. Are these costs likely to increase or decrease over time?
8. What are the emerging areas of concern?

Policy-makers need to be aware of the impacts of gambling to balance the trade-off between the desire to provide gambling opportunities and the desire to minimize the harm to individuals.

Currently, the inability to provide answers to these questions fundamentally clogs the process of developing gambling policy. An understanding of the impact of gambling's expansion is a prerequisite to the development of appropriate policy. Policy makers need to be aware of the impacts of gambling to balance the trade-off between the desire to provide gambling opportunities and the desire to minimize the harm to individuals. Knowledge of gambling's impact enables the determination of the healthiest gambling policy—a policy in which the trade-off between the harm and good of gambling expansion provides the maximum public benefit.

A greater awareness of the benefit and cost of gambling would also provide citizens with an opportunity to guide their responses to public referenda and gambling policy reviews. A fundamental goal of impact assessment should be informing the public of the impacts of gambling so that they may make decisions on what are the appropriate policies to demand of their provincial governments. While provincial gaming authorities have been proactive in consulting with the community in policy reviews (Azmier and Smith, 1998), the public is frustrated from a lack of information to guide the consultation process. As a result, the recommendation of policy reviews is often that more research is necessary (Alberta Gaming Summit, 1998).

Although there is a strong desire to explore these research questions, the ability to provide answers has proven very difficult for the research community. Complicating the process has been a number of methodological and political barriers that stall research efforts and cloud the public's understanding. However, the gambling research community has begun to find common ground on approaches to overcoming the methodological barriers. As recently as

last September, an international symposium was held in Whistler, BC for leading gambling researchers studying the measurement of gambling impacts. For three days the researchers sat down face to face to work through their methodological differences (Whistler, 2000).

This meeting proved to be a healthy step forward. Building on the efforts of the Whistler Symposium, Canada West launched a research initiative to serve two purposes: (1) to explain and illustrate the methodological problems in developing a measure of gambling's impact; and (2) to propose a potential means of calculating gambling's impact. Over the course of the research, however, it became clear that in the absence of some consensus on the many methodological issues, it is not possible to evaluate gambling's impact. Simply put, until it is understood what the impacts of gambling's expansion are, it is not possible to begin to weigh them against each other. As a result, this report will focus on the current state of economic research into gambling's impact, and will conclude with some proposals to overcome research barriers. It is hoped that by doing so, another step forward will be taken towards providing a means of assessing the impact of gambling.

The failing of an economic impact analysis is that it will only mention in passing or ignore altogether the real private and social costs associated with gambling.

As a consequence of the methods employed by such a study, the conclusions will amplify the benefits of gambling by downplaying the social costs.

STRUCTURAL APPROACHES TO VALUATING SOCIAL COSTS AND ECONOMIC BENEFIT

The existing research on the socio-economic impact of gambling generally approaches the valuation of gambling's impact from two economics-based approaches: cost-benefit analysis or economic impact analysis. Although based on similar principles of determining net benefits, these approaches are actually fundamentally different. A cost-benefit analysis considers the economic efficiency of gambling activity while an economic impact analysis uses "multiplier effects" to determine the compounding impact of gambling on the regional distribution of economic activity (Stynes, 1997).

Critically, both approaches are flawed in their ability to contribute to our understanding of gambling's impact. The failing of an economic impact analysis is that it will only mention in passing or ignore altogether the real private and social costs associated with gambling. As a consequence of the methods employed by such a study, the conclusions will amplify the benefits of gambling by downplaying the social costs.

Economic cost-benefit analysis is equally flawed in that it considers what is economically efficient by attempting to quantify everything, including those things that are difficult to value (e.g., stress and mental anguish, entertainment). Such studies have limited utility because the assumptions necessary to value those personal costs and benefits cannot be applied universally in other regions. These assumptions are also easily challenged and often flawed. Both of these approaches also fail because they address gambling's impact from a purely economic perspective and, as a result, fail to provide a full accounting of the scope of gambling's impact.

Rather, what is needed to inform policy makers and the public is an extended analysis of gambling's impact on community public health. It can be argued that the public health approach to the assessment of gambling policy is a better framework for assessing gambling's impact as it considers the broadest possible range of factors (Korn et. al., 2000). The value of the public health perspective is that it allows researchers to consider the economic consequences of gambling's expansion in tandem with the qualitative impacts. Korn et al. (2000) suggest an approach to the valuation of gambling impacts that includes:

- harm-reduction efforts to prevent gambling-related problems, thereby decreasing the adverse consequences of gambling behaviour;
- changes in the risks of problems for the gambler;
- the quality of life of families and communities affected by gambling;
- the multiple biological, behavioural, socioeconomic, cultural, and policy determinants influencing gambling and health;
- a life-cycle approach to measuring social and economic impacts, one that recognizes significant changes in the social context within which gambling takes place;
- the concern for the impact of gambling expansion on vulnerable, marginalized and at risk population groups; and
- the economic costs and benefits associated with gambling.

A public health approach to measuring gambling impacts provides an opportunity to focus research on what should be the primary goal: to inform the development of gambling policy that will maximize the benefits of gambling while minimizing the harm.

This conceptual approach provides an opportunity to focus research on what should be the primary goal: to inform the development of gambling policy that will maximize the benefits of gambling while minimizing the harm.

While a public health approach addresses the incompleteness of economic analysis alone, it does not supplant the need to solve the methodological concerns inherent in economic approaches. Any measure of gambling's impact, including a public health approach, needs to include an analysis of the socio-economic aspects of gambling.

SEVEN CONCERNS ABOUT SOCIO-ECONOMIC IMPACT STUDIES

In addition to the concerns about socio-economic analysis being too narrowly focused, there are a number of general concerns about the nature of the impact studies that should be stated at the outset.

First, economic impact studies are not a manner of determining if gambling has been good or bad for a community. Judgments of this nature are dependent on individual perspectives of harm and benefit and cannot be answered through research alone. Rather, as stated earlier, the fundamental impetus behind the evaluation of the costs and benefits of gambling should be to

aid in the development of healthy gambling policy. While impact assessment studies are useful in determining those opportunities for harm minimization and benefit maximization, they are much less effective as a means for determining the overall impact of past gambling expansion.

Second, economic studies are inappropriate for determining the viability of future gambling expansion. The key failing of research based on economic principles alone is the underlying assumption that as long as the projected marginal benefits exceed the projected marginal costs of a project, then the project is determined to be economically efficient. This conclusion runs counter the harm minimization goal of a public health approach to gambling. Under this model, the creation of increased harm cannot be mitigated by the production of greater value alone. Doing so assumes that the costs and benefits are shared equally among the community. The reality is that those individuals harmed are rarely those who also benefit.

How researchers deal with the valuation of gambling's costs and benefits can significantly influence the outcomes of their research.

In most studies, these aspects are reported, but not valued.

Third, socio-economic research in this field is often inadequate because many impacts of gambling are felt at the personal level and are difficult, if not impossible, to value in monetary terms. Stress, suicide, emotional trauma, and entertainment simply do not translate into financial terms without considerable manipulation. How researchers deal with the valuation of these costs and benefits can significantly influence the outcomes of their research. In most studies, these aspects are reported, but not valued. However, the unintended consequence of that decision is often to downplay the importance of gambling's costs because they have no easily reported value. Yet costs that are hard to calculate are still costs.

A fourth limitation of this research is that the economic valuation of overall impacts is somewhat artificial because gambling is primarily a redistributive activity. The revenues from gambling either come from within the surrounding community or from a neighbouring community. Therefore, the financial benefits felt by community A must be offset by equal losses in community B. Studies of one community often fail to report the consequences felt in surrounding regions. The nature of cost-benefit analysis is that as the social costs of gambling are exported outside the community of study, the costs tend not to be valued. However, the harm or benefit borne outside provincial or national borders should still form part of the impact equation.

Fifth, most impact assessment studies are not conducted by independent researchers. These studies are relatively expensive because of the large number of variables to be measured; as a consequence, most studies to date have been funded by government and industry sources. While that in itself is not a reason to discount the findings of these studies, it points to a legitimate concern over the possible bias presented in the results. As it is likely that government will continue to be the primary funder of this type of research, a system of peer-reviewed impact studies is needed to improve the utility of the data obtained. Greater involvement by a broad range of stakeholders in the research design process would also increase the validity of the research design.

A sixth concern is that socio-economic impact studies do not tend to consider the source of gambling revenue. By using aggregate totals, the consequences of the regressive nature of gambling revenue are understated. In reality, there is a difference in the marginal utility of money on both the cost and benefit ends of impact assessment. Revenue lost by lower income persons is likely to have a greater impact on their ability to meet basic needs than a loss of revenue to a higher income earner. Similarly, gambling employment benefits may have more impact in regions with higher unemployment. Impact studies generally fail to account for these realities.

Finally, gambling's impacts do not occur inside a vacuum. A dynamic element exists where the costs and benefits accruing today cannot be given the same value as the costs and benefits accruing 10 years from now. A snapshot of the costs associated with problem gamblers may prove inaccurate especially if most are in the early stages of the disorder. Unless they receive treatment and "beat" their addiction, present day costs will likely be dwarfed by the costs a problem gambler will impose on society in the future. By excluding the element of time in their analysis, studies fail to provide a complete picture of the total benefits and costs associated with gambling.

MEASUREMENT OF GAMBLING'S IMPACT

While many researchers have attempted to measure the impacts of gambling, few have been able to develop a sound methodological framework. In most cases, their lack of success can be traced back to two inherent problems. First, attributing most gambling related impacts to the actual act of gambling has proven extremely difficult. For example, suppose that in a few years, after the four proposed casinos are introduced in Manitoba, the province goes through an economic "boom." Under this scenario, one might conclude that the province's economic success is due to the expansion of casino gambling. However, at the same time, thriving agricultural and manufacturing sectors would also play a major role in any upturn for the Manitoba economy. Isolating the economic impacts of a casino can be very difficult in the presence of so many other economic variables.

A second problem is that, even if researchers find costs and benefits that can be linked back to gambling, their ability to value these costs and benefits against one another becomes problematic. How does one value the benefits associated with economic development against the costs of family breakdown and increased crime rates? Assessing these tradeoffs has proven to be an extremely difficult task for researchers.

With these two issues in mind, an examination will follow of the many specific methodological flaws that continue to be made. In addition, certain limitations of using a traditional economic analysis to assess the impacts of gambling will be highlighted throughout the remainder of this section.

DEFINITIONS:

Individual/Personal Impacts

These are the effects of gambling that directly impact people at the personal level. While they may have both positive and negative implications from a private perspective, they are often not included in an economic analysis when a community perspective is taken.

Community/Social Impacts

In an economic analysis, impacts are most often assessed from a broader perspective. This "social perspective" allows researchers to examine how gambling impacts on communities as a whole. A community can be defined as any geographic area (e.g., town, city, province) where the impacts of gambling are being evaluated.

ECONOMIC DEVELOPMENT

Casinos have often been touted as engines for economic development. This "economic spark" was exactly what both municipal and provincial officials had hoped for when they introduced the Windsor Casino (Heimpel, 1998). They envisaged that the casino would act as a catalyst for community economic development, create jobs, and promote the tourism and hospitality industry of Ontario (Heimpel, 1998). Analyzing how effective casinos have been at spurring economic growth often requires researchers to look past any of the isolated impacts a casino may have on a community and focus on net effects. For example, casinos have transformed themselves into large entertainment complexes offering not only traditional gambling activities but also adjoining hotels, restaurants, and retail outlets. With these additional amenities casinos have quickly become fierce competitors in the battle for the consumer dollar, often causing them to crowd out many smaller businesses that were located in the vicinity of the casino. While casinos can negatively impact some businesses, they often benefit complementary ones such as hotels and other tourist-oriented businesses. The demise of some businesses and the emergence of others can also translate into both job loss and creation for the community. Researchers will often evaluate economic development based on these net business and employment effects for a community. While netting impacts is an integral part of any economic analysis, it remains only one element of a broader perspective.

DEFINITIONS:

Economic Transfers

When a specific impact does not make the community as a whole either better or worse off then the impact can be termed an economic transfer. While impacts that are categorized as economic transfers can have both positive and negative consequences at the individual level, they may leave everything unchanged from the community's perspective.

TOURISM

Similarly, it is important for researchers to focus on any new revenue streams that a casino brings into a community. When a casino attracts tourists to the area the result is often an influx of "new money" into the community. By contrast, when money spent on gambling originates from within the local community, little or no economic development actually occurs. This money would have seemingly been spent on other goods and services within the community and, as such, should be viewed simply as an economic transfer within that community. However, money that stays within a community as a result of a new casino opening, (e.g., when gamblers that no longer go to some other town to gamble), should be recognized as new money.

Many studies make differentiating between new money and money that is simply transferred within a community very difficult. Researchers will often neglect to specify the geographic area for which they plan to evaluate the costs and benefits of gambling. While this area can take the form of a town, city, province, or even an entire country, it is the specification of this "reference group" that allows a specific impact to be classified as a cost, benefit, or economic transfer.

While there are benefits to having tourists frequent a local casino, there may also be some associated costs. More visitors usually means more traffic and congestion for a community. While it is virtually impossible to place an accurate value on crowded roadways, most people will still view this as a cost that needs to be measured. The extent to which these elements are

seen as costs will ultimately be determined by a set of community-held values. While some studies have attempted to value these intangible items, their results often face heavy criticism. Accurately measuring these intangibles is an ongoing challenge for a traditional cost-benefit or impact analysis.

ECONOMIC SPINOFFS

Many authors use economic multipliers to represent the spinoff benefits that a casino can provide for a community. The notion behind multipliers is that a dollar spent on gambling will be worth more than the original dollar once it "ripples" through the economy. While this concept is straightforward, the benefits of economic multipliers are often overstated (see appendix A).

When applying multipliers to gambling expenditures, many studies fail to distinguish between local and tourist spending. If a multiplier is used to account for the spinoffs of local gambling expenditures, the economic impacts of gambling are most likely being overstated. A majority of these dollars would have been spent locally on other goods and services that also provide multiplier benefits so the problem of double counting can enter into the analysis. Moreover, many studies focus solely on the benefit side and fail to recognize that costs will ripple through the economy in a similar manner. While focusing on benefits, it is easy to forget that it costs money to provide someone with a clean hotel room, a well-prepared meal, or a full tank of fuel. These costs need to be accounted for, but rarely are when multipliers are used to explain economic spin-offs.

"...in 1978 [the year the first casino opened], there were 311 taverns and restaurants in Atlantic City. Nineteen years later, only 66 remained...."
National Gambling Impact Study Commission, 1999

ADDITIONAL INFRASTRUCTURE

Additional infrastructure including everything from roads, traffic lights and power to water and sewer lines may need to be constructed to service a new casino. While there is a widely-held belief that new infrastructure should be categorized as a benefit of a casino project, this may not always be the case. If additional infrastructure is paid for through municipal taxation then there would be an opportunity cost that would need to be estimated. For example, a public swimming pool may be the project set aside to allow the community to finance the required infrastructure for the casino. In addition, costs such as long-term infrastructure replacement and certain operational expenses for municipal services, such as policing, traffic management, and fire services, may fall under the responsibility of the community (City of Vancouver Casino Review, 1994). All these additional costs should be attributed to the casino project.

In Windsor, for example, a recent study found that 41% of the US visitors would not have come without the casino.
Henrikkson, 1996

PROPERTY VALUES

It has been suggested that the nuisances that accompany casinos, including lights, noise and traffic, may cause the value of nearby residences to fall (Clauretie, 1998). These reduced property values are often looked upon as costs attributable to a casino project. These costs can be assessed from two different perspectives. Evaluating the effects of gambling from a private perspective considers how an event specifically impacts on an individual's personal well-being.

When examining impacts from a social perspective, a benefit or cost can be defined as an action that either increases or reduces aggregate societal real wealth (Walker, 1999). With this in mind, reduced property values are clearly a cost when viewed from a private perspective. However, from a social perspective, one person's loss (i.e., the seller) is another person's gain (i.e., the buyer). This suggests that changing property values can be viewed as an economic transfer, so long as the buyer and seller both originate from within the reference group.

"The practice in Manitoba is to use a portion of the revenues for current programming and to squirrel away a portion in a 'rainy-day' fund."
Black 1996

GOVERNMENT GAMBLING REVENUES

Governments have become increasingly reliant on the billions of dollars in revenues that gambling provides for them each year. However, gambling revenues are essentially a tax system whereby gamblers pay but both gamblers and non-gamblers receive the benefit. Gambling revenues are simply a transfer of wealth from an individual to the government and then back to the individual. Once again, gambling revenues should not be viewed as an economic benefit unless the money comes from outside of the reference group. Many studies fail to recognize this, causing them to overstate the benefits of gambling. However, even though government gambling revenues should be treated as a transfers in an economic analysis, people may still view this money as inherently beneficial. Governments that allocate gambling revenues towards charitable organizations may be providing present and future benefits for the people who rely on these organizations. While it is unlikely that these benefits will show up in an economic analysis, it is important to remember that they do still exist.

One study estimates that recreational gamblers receive between $2.7 billion to $4.5 billion of satisfaction or entertainment value from gambling.
Productivity Commission, 1999

GAMBLING AS A LEISURE ACTIVITY

When assessing the impacts of gambling, many studies simply focus on problem gamblers–the small percentage of gamblers who impose a disproportionate amount of costs on society. However, an economic analysis would be incomplete if the enjoyment or "emotional benefits" received by recreational gamblers were to be ignored. Economists attempt to quantify these benefits by looking at the difference between what someone ***actually*** pays for a gambling service (i.e., one play on a VLT) and what they would be ***willing*** to pay for that service. The difference between these two values, referred to as consumer surplus, would then represent the net benefit someone would receive from engaging in that gambling activity. However, it is important that these estimated benefits be carefully measured. The methods used and results obtained from valuing these impacts are often criticized. Furthermore, researchers often compare these intangible emotional benefits (and costs) directly with actual tangible benefits and costs. This comparison becomes one of seemingly unquantifiable impacts (many of which are attached huge values) with economic impacts that are more easily valued. Directly comparing these two types of impacts can be viewed as a major drawback of using a cost benefit analysis to assess the impacts of gambling.

PROBLEM GAMBLING

It has been estimated that between 3-5% of the adult population in Canada suffer from a gambling-related disorder (Azmier, 2000). While this small percentage of the population can inflict some very real costs on society, attributing all of these costs to the act of gambling may be difficult. Many of the individuals who suffer from a gambling disorder may also have other psychiatric or addictive disorders, a condition known as co-morbidity, which can make it difficult to isolate the costs of a specific disorder (Westphal, 1999). However, it has also been noted that gambling will intensify problems for people who may suffer from prior disorders (Productivity Commission, 1999). It is important that only the costs over and above the ones that can be attributed to a prior disorder be considered. While the inclusion of costs that would have prevailed in the absence of gambling may result in certain costs being double counted, isolating these costs is no easy task.

"Family members described signs of stress in the gambler—basically they're irritable, distracted, and depressed ...family members often feel emotionally isolated, cannot concentrate on work and have difficulty trusting others."
Dr. David Hodgins, Calgary Herald, May 15, 2001

PERSONAL AND INTERPERSONAL COSTS

While many people gamble with the hope that "today may be their lucky day," they are likely also aware that they may come up on the losing end. Participating in gambling activities (along with the understanding of any consequences that may ensue) has been looked upon as being a rational choice that individuals make (see appendix B). Even though people are generally aware of the possible consequences of gambling, a small percentage of the population will still develop an addiction to gambling. Individuals who develop a gambling disorder may find themselves being stressed, anxious, and depressed on a regular basis (Productivity Commission, 1999). While these costs are very real for the problem gambler, they are often classified as private costs and hence are not included in some economic analysis. Even though these costs are often excluded from economic analysis, the cost that these impacts create should still be measured and ways to reduce them sought.

When the behaviour of a problem gambler spills over to other people, social costs are often the result. The behaviour of a problem gambler can impose massive psychological and emotional costs on others, most of whom are members of their immediate family. Child neglect and spousal abuse often occur in the homes of problem gamblers and, if left long enough without help, can lead to family break-up, divorce, and even suicide. Some studies contend that it is impossible to measure these emotional impacts while others have made attempts to value these impacts in dollars and cents. For example, the emotional distress caused to the immediate family members of a problem gambler has been estimated at falling somewhere between $5,000 and $15,000 (Productivity Commission, 1999). Placing a dollar value on these emotional costs, while providing an approximation, will unlikely reflect the true costs. However, completely ignoring these emotional costs will surely underestimate any costs to society. Again, the inability of researchers to accurately quantify these variables is a limitation of the current methods being used.

WORK & STUDY COSTS

"Slot machines are the best employees; they function for 24 hours a day without rest, sick pay, or food."
Seelig, 1998

When an individual suffers from a gambling disorder, their problems are not always limited to their homes. Problems can spill over into their workplace, resulting in lost productivity and even job loss. In the case of lost productivity, businesses will often be unable to operate at maximum efficiently when workers are either absent or less productive as a result of a gambling disorder. In this case, the actions and eventual consequences of the problem gambler should be viewed as a cost to society. In addition, there is always the possibility that a problem gambler could find himself out of a job as a result of his actions. While the loss of income is definitely a private cost to a problem gambler, it may not be considered a cost when viewed from a social perspective if that employee is replaced by a new hire. Of course, in this process, employers may incur severance or replacement costs, such as hiring and training costs, that should be included as social costs in an economic analysis. From a public health perspective, costs are definitely incurred by individuals who lose jobs. Even though these costs may not always appear in an economic analysis, it is important that their minimization remain a focus of public policy.

In many studies, unemployment compensation is attributed as a cost of problem gambling. This may not always be the case, as unemployment compensation received by a problem gambler can be viewed as an income transfer from the employed to the unemployed and as a result should not be included as a cost in an economic analysis (Walker, 1999). However, costs associated with the collection of additional tax dollars to fund an employment insurance program should be viewed as a social cost (Walker, 1999). While the actual unemployment compensation may constitute an economic transfer, any negative feelings an individual may have that are related to the social stigmas of receiving social assistance should be considered under a broad public health perspective.

LEGAL COSTS

Crimes such as embezzlement and fraud have long been associated with problem gamblers. Regardless of what means are used to illegally obtain these funds, an economic analysis will often treat the act as a transfer of wealth between two people. It has been cited that the costs of police, trials and incarceration are the real social costs of gambling-related crime (Walker, 1999). Further, expenditures made (i.e., heightened computer security, alarm systems) by victims of crime, in an attempt to shield themselves from future crime, should also be considered as costs. While theft is often looked upon as an economic transfer, that does not diminish the personal consequences of having money or property stolen away.

Similar to the emotional impact problem gamblers impose on members of their family, a value for the emotional costs due to crime should also be determined. For example, in an attempt to quantify "pain and suffering," one study examined what the average jury awards to crime and burn victims were, and from this, a value was established for several different types of crimes

(Productivity Commission, 1999). While measuring these costs is important, they are often based on value judgments which raise concerns about their validity.

FINANCIAL COSTS

In order to support their addiction, problem gamblers often resort to abusing credit cards, writing bad cheques, and borrowing money from family and friends. When these destructive habits persist, many problem gamblers are forced to declare bankruptcy. While an unpaid debt can be financially damaging to the creditor, the passing of wealth from creditor to debtor is often considered a transfer of wealth in an economic analysis, and as such would not qualify as a social cost (Walker, 1999). However, the amount spent by the creditor in an attempt to recover the bad debt should be considered a social cost since it is money that could have been put towards an alternative use (Walker, 1999). Even though bad debts may not be captured as a cost in an economic analysis it is important that they are measured and tracked to better inform gambling policy.

Some of the positive and negative personal impacts of gambling are treated as transfers in economic analysis.

Although not part of some economic assessments, these transfers still have real personal costs that can be measured and monitored to determine their impact upon public health.

HEALTH AND TREATMENT COSTS

Along with the expansion of legalized gambling in Canada has come the need for additional treatment programs to combat gambling-related problems. It has been suggested that government-funded counseling services are external costs, and as such, should be considered as social costs (Productivity Commission, 1999). While there are opportunity costs associated with these programs, people may still consider them as having an underlying benefit. Programs such as Gamblers Anonymous may allow problem gamblers to either avoid or minimize any future costs that may occur (e.g., family break-up, criminal activity, financial losses). If this is the case, the actual costs associated with running a treatment program may be mitigated by the fact that any future costs may have been minimized.

SUMMARY

The elements of gambling's impact are outlined in Table 1 (following page). As illustrated in the table, some of the positive and negative personal impacts of gambling are treated as transfers in economic analysis. Although not part of some economic assessments, these transfers still have real personal costs that can be measured and monitored to determine their impact upon public health.

The effectiveness of using cost-benefit and impacts studies to assessing the impact that gambling has on a community faces some significant real world obstacles. On practical grounds, finding relevant data to measure certain impacts of gambling is difficult. Either data do not exist or many of the variables being examined are not easily quantified. On philosophical grounds, the values that are attached to seemingly unquantifiable variables are often subject to scrutiny. In many cases, the values are those of the researcher which may not reflect community values.

Table 1

Summary of Gambling's Impacts from an Economic Perspective

	Individual/ Personal Impact	*Community/ Social Impact*	*Economic Transfer*
POSITIVE IMPACTS			
Economic Development			
Net job creation		✓	
Net business sector growth		✓	
Tourist spending		✓	
Additional infrastructure[1]		✓	
Rise in property values[2]	✓		✓
Government Gambling Revenues			
Obtained from local spending			✓
Obtained from tourist spending		✓	
Spending on charities and community programs			✓
Gambling as a Leisure Activity	✓	✓	
NEGATIVE IMPACTS			
Economic Development			
Net job loss		✓	
Net business sector decline		✓	
Long-term infrastructure replacement		✓	
Traffic congestion		✓	
Decline in property values[2]	✓		✓
Problem Gambling			
Personal and Interpersonal			
Personal effects (e.g., depression, stress)	✓		
Psychological impacts on family & friends		✓	
Family break-up (e.g., divorce, suicide)		✓	
Work and Study			
Job loss[3]	✓		✓
Costs of re-hiring/training workers		✓	
Absenteeism/lost worker productivity		✓	
Unemployment compensation			✓
Legal			
Crime (e.g., embezzlement, fraud)[4]	✓		✓
Policing/incarceration costs		✓	
Judiciary costs		✓	
Additional security costs		✓	
Financial			
Bad debts, personal bankruptcy[5]	✓		✓
Costs to recover bad debts		✓	
Health and Treatment			
Operating counseling/treatment programs		✓	

Notes:

1. Viewed as a positive impact for the community as long as the Province pays for a portion

2. If buyer and seller originate from within the community, a change in property values is often viewed as an economic transfer

3. If the job is filled by a previously unemployed individual, this can be looked upon as economic transfer

4. Increased fear and insecurity for those who fall prey to these crimes is a personal cost; however, the actual movement of money is often viewed as an economic transfer

5. While the lender of money will be worse off as a result of an unpaid debt, from a community perspective this is often seen as an economic transfer

BARRIERS TO COLLECTING DATA ON GAMBLING'S IMPACT

Even if all aspects regarding the design of cost-benefit and impact studies have been recognized, there are a number of issues with existing data that can affect the ability for a study to accurately account for the costs and benefits that result from the introduction of gambling. In many cases data are limited if available at all. For data that do exist, it is important to realize that there are often inherent problems with collection, as well as external influences that, when not taken into consideration, can provide a misleading framework for analysis. Aside from common factors that affect data collection in general, such as consistency and accuracy, there are unique factors within the Canadian gambling industry that influence the relevance and usefulness of available data. These include provincial regulations, types and forms of gambling offered, and revenue sharing arrangements.

Because more data exist to measure economic impacts than to account for the social costs of introducing gambling to a region, there can be a tendency for researchers to overstate economic benefits and understate the harder to quantify social costs.

NON-EXISTENT DATA

As elaborated on in prior sections, it is difficult to account for many of the costs and benefits associated with legalized gambling. Due to the inability to quantify and measure certain effects of gambling, for many fields data often do not exist or at best are ineffective as an indicator. This is particularly true for the social costs of gambling such as family impact. A researcher might be tempted to simply construct a study based on available data, but doing so would result in a seriously flawed and inaccurate impact assessment. Because more data exist to measure economic impacts than to account for the social costs of introducing gambling to a region, there can be a tendency for researchers to overstate economic benefits and understate the harder to quantify social costs.

There exists a paucity of gambling-related data worldwide. In many cases, the collection of gambling data is costly and unless statistics are required to be kept by law or there exists an incentive for the gambling industry to keep well-defined records, data will not be recorded. While every local police jurisdiction collects statistics on crime, causation or the motives for a crime are not widely recorded. As a consequence, while many attempts have been made to identify whether the introduction of gambling benefits a community, a uniform methodology has not been developed.

DISINCENTIVES TO COLLECT DATA

Governments have been generally slow to provide the needed data to evaluate the outcome of gambling expansion. Some key aspects of impact assessments, such as problem gambling prevalence research, are often so out-of-date that current provincial estimates of the number of problem gamblers are unreliable.

Part of this deficiency may be attributable to the conflicted position of government as both regulator and benefactor of gambling. This dual role creates an underlying disincentive to

track the negative impacts of gambling and an incentive to promote the positive aspects. Governments, as providers of both gambling and treatment products, are in the best position to measure impacts, yet to date there has been relatively little effort in this area.

REFERENCE GROUP DATA

The recent expansion of gambling in Canada presents an obstacle for researchers as many of the economic and social impacts of gambling on communities do not occur immediately after the introduction of gambling to a region, but instead can take years to develop.

Deciding what variables to incorporate within cost-benefit and impact studies is often dictated by the amount of data available in a region. Many data fields, such as revenues to treat problem gambling, contributions to charities, and court costs are collected at the provincial level. Limited data are available at the level of the regional health authority or by legal jurisdiction, but it is often only possible to access provincial totals. In general, the larger the region the more easy it is to collect data.

In Canada, while provincial lottery corporations, gaming authorities and Statistics Canada do provide limited gambling related data for provinces as a whole, there is an overall lack of data defined at the regional or local level. Consistent and annual travel statistics, for example, are mainly collected at the national and provincial level. This can be problematic, as cost-benefit studies need to access sources of data that correspond to the geographical area or reference group being analyzed.

DATA COMPARABILITY

Even in areas where gambling has been established for a significant period of time, data regarding the impacts of gambling are often collected on an infrequent basis. Data among jurisdictions may be collected for different years. Unless collection methods and data fields are consistent between regions and within separate cost-benefit studies, comparisons of the effects of gambling among different communities will not be robust. Different collection and accounting methods tend to exacerbate reported differences in the effects of gambling among communities.

LONGITUDINAL DATA

The recent expansion of gambling in Canada presents an obstacle for researchers as many of the economic and social impacts of gambling on communities do not occur immediately after the introduction of gambling to a region, but instead can take years to develop. For problem gambling, estimates of the average duration of an active gambling addiction range between 6.5 years (Lamar Moore, 1999) and 9 years (Productivity Commission, 1999). Another related problem is that in many cases data collection to measure the effects of gambling only began after the introduction of gambling to a region. With little or no longitudinal data available to provide a reference to a community's economic and social structure prior to the introduction of gambling, it can be hard to identify trends that have occurred in response to an expansion of gambling services.

An additional problem that the recent expansion of gambling presents is that the influence of macroeconomic impacts such as seasonal trends and business cycles on economic variables will be hard to filter out, for a temporally limited data set. A general rule is that the length and amount of data required to eliminate a seasonal or cyclical component should be five times longer than the cycle itself (e.g., for a business cycle lasting 5 years, 25 years of data would be needed). In the event that data for a region are only collected after the introduction of gambling, combined with the fact that the expansion of gambling has begun recently and hence there does not exist a large quantity of data after its introduction, it is hard to account for many of these cyclical trends.

One of the main problems with trying to identify and measure the relationship between problem gambling and crime is that crime statistics are often imprecise and recording procedures inconsistent over time.
Smith and Wynne, 1999

In addition to economic effects, socio-economic trends can also be influenced by a number of external factors including changes to immigration policies, transfer payments, inter-provincial migration, program and policy changes. As with economic variables it is difficult to track and account for these changes where all available data are limited in scope and time series length.

VALIDITY OF DATA

The results from patron surveys, which are designed to measure casino client demographics, should be interpreted with discretion. In addition to common concerns regarding surveys such as researcher bias and low response rates, it should be noted whether a casino patron survey was proactive or reactive. Reactive surveys, or those where patrons voluntarily and without prompt choose to complete a survey, more often than not will be completed by new visitors to a casino. It is unlikely that a frequent visitor or problem gambler will chose to voluntarily complete a survey each time they enter.

In measuring public opinion and social cost, different social norms associated with gambling in certain communities may alter the nature of responses to random telephone and public opinion surveys. In a replication study to determine the prevalence of problem gambling in Louisiana, it was found that between 1995 and 1998 the number of people who claimed to have not gambled in the past year increased from 19.9% to 30.2% (Lamar Moore, 1999). This occurred even though the state of Louisiana saw a dramatic increase in gambling revenues, and in both the number of venues and types of gambling offered throughout the state. Respondents to the study may have been differentially affected from 1995 to 1998 by social stigmas associated with various gambling activities (Lamar Moore, 1999).

A PRACTICAL ILLUSTRATION: PROBLEM GAMBLING AND CRIME

One of the main problems with trying to identify and measure the relationship between problem gambling and crime is that crime statistics are often imprecise and recording procedures inconsistent over time (Smith, 1999). Unless properly accounted for, an increase in the number of recorded crimes can lead researchers to falsely conclude that crime rates are

on the rise. Records are seldom kept on the underlying motives for a crime. Even if records are collected there can exist multiple motivations for a crime, such as unemployment and gambling, that can further make it difficult for researchers to link causation and crime.

None of the law enforcement agencies in western provinces keep records detailing whether gambling is a contributing factor to crime.
Smith and Wynne, 1999

Another complication with establishing a link between problem gambling and crime is that crime prevention programs and initiatives that increase the percentage of existing crimes detected can give the appearance that the crime rate has increased when detection rates are again what have risen. It is likely that the creation of law enforcement initiatives, such as the Ontario Illegal Gaming Enforcement Unit (OIGE), will eventually result in a decrease in gambling-related crime. However, as more crimes are detected it may appear that illegal gambling has increased.

With current legal trends and court rulings recognizing problem gambling as a mitigating defence against fraud, the numbers of frauds claimed to be committed as a result of a gambling addiction may also increase in future years. This does not necessarily imply that gambling-related fraud was not a problem prior to the introduction of gambling. It may be that in the absence of an established legal precedent, few cases used problem gambling as a defence. If problem gambling becomes widely recognized as a mitigating defence against crime, more people will likely come forward using this as a defense whom otherwise would not.

POLICY AND RESEARCH RECOMMENDATIONS:

1. THE NATURE OF TRADEOFFS BEING MADE AFTER THE INTRODUCTION OF GAMBLING TO A REGION SHOULD BE RECOGNIZED.

It is important to realize that the main goal of cost-benefit and impact studies is to determine whether gambling provides "net benefits" and not total benefits. This distinction is meaningful to make as by measuring net benefits, tradeoffs are made. Most of these tradeoffs exist in the form of assigning market values to social costs such as suicides and gambling addiction and then comparing these costs to the economic benefits. By doing this, researchers implicitly are making value judgments. Individuals and communities exhibit different values that .nust be considered. Imposing a uniform methodology, or the results of one cost-benefit study conducted from one region on another, will not adequately take this into account.

Many cost-benefit and impact studies assign a range of possible outcomes when attempting to quantify the impact of gambling on a region. Aside from concerns as to whether certain effects of gambling should be quantified, it has been mentioned that any efforts to be more precise than providing an estimated range of values would be misleading as it implies a greater

level of precision than is possible (Hawke, 2000). However, studies that provide a range of values at best can lead to an ambiguous conclusion for gambling policy. In a study commissioned to measure the impacts of gambling in Australia, final estimates ranged from $1.2 billion to $4.3 billion (Hawke, 2000).

2. DATA SHOULD BE COLLECTED BOTH BEFORE AND AFTER THE INTRODUCTION OF GAMBLING TO A REGION.

Our knowledge of the socio-economic impacts of gambling is limited due in part to the fact that an active, transparent and uniform attempt to collect data throughout all regions has not been initiated.

While some data do exist to measure the effects of gambling on communities, it is important to realize their limitations. At best, currently available data can be a valuable tool to help identify areas that warrant additional research. They should not be considered as wholly predictive or explanatory. It is important to be aware of underlying factors that may influence the emergence or lack of emergence of trends. Factors including macro-economic effects, methods to record data, social trends and the introduction of laws and regulations should all be researched in order to better determine the reason for trends that emerge after gambling is introduced to a region. In so doing the public will be better informed when developing gambling policy to achieve the public health goals of maximization of benefits and minimization of costs.

In order to better understand how gambling impacts communities, efforts to collect data need to increase. Our knowledge of the socio-economic impacts of gambling is limited due in part to the fact that an active, transparent and uniform attempt to collect data throughout all regions has not been initiated. Provincial gaming authorities should be given the mandate and resources to collect gambling-relevant data at regular and consistent intervals. In addition, provincial gaming authorities should collaborate with each other and with Statistics Canada to establish consistent, valid and reliable measures to be used in all provinces. This would ensure data comparability and allow for a richer understanding of gambling's costs and benefits. Examples of the kind of data needed to increase our understanding of gambling are presented in Table 2 (following page). If data like this were collected in a consistent manner over time, longitudinal patterns may emerge that would provide valuable information for future policy formation.

3. DATA SHOULD BE ACCESSIBLE TO THE PUBLIC.

Data collected should be publicly available for independent analysis so that all stakeholders in regions that are impacted by the expansion of gambling are better informed of the costs and benefits. Making sources of data available to the public will allow communities to have the ability to recognize the tradeoffs that are being made and in the process to identify where the costs and benefits of gambling fall in a community. A transparent source of data would enable communities to identify which areas in their community are positively and adversely impacted by gambling. This will allow communities to make decisions based on their own unique values.

Table 2

Data Related to Gambling s Impact that Should be Collected

1. Gambling Labour Force Characteristics for Each Type of Gambling

- Number of employees
- Number of gambling employees who were previously unemployed
- Socio-demographic characteristics of gambling employees
- Percentage of employees employed full-time
- Average Annual and hourly wages

2. Annual and Aggregate Gambling Statistics for Each Type of Gambling

- Per capita adult expenditures and losses
- Expenditures and losses as a percentage of household disposable income
- Gambling revenue as a percentage of total provincial revenues
- Annual growth rates
- Percentage of gambling patrons from outside region
- Average visitor spending
- Tourists citing gambling as primary reason to visit region; as a contributing factor

3. Problem Gambling Data

- Prevalence of problem gambling in a region
- Personal and family effects of problem gambling including divorce, suicide, bankruptcy
- Number of problem gamblers who seek treatment
- Revenues and expenditures allocated for problem gambling treatment, education and prevention

4. Gambling Related Crimes and Regulations

- Community crime statistics where gambling was cited as a motivating factor for below fields;
  - a) Violent Crime—homicides, attempted murders, assaults, robberies, harrasment/stalking
  - b) Non-Violent Crimes—break and enter, vehicle theft, fraud, theft over/under $5,000
- Total number and cost of gambling-related court trials
- Cost of gambling-related crime regulations and prevention programs

5. Charitable Sector and Social Spending

- Total number of gambling-related charitable donations, value and number of grants
- Amount and value of non-gambling charitable donations and grants
- Gambling revenue contributions to government social spending and grant programs
- Number, type and size of charities that receive gambling revenue donations and grants

6. Regional Labour Market Data

- Employment and labour force participation
- Per-capita personal and disposable income
- Per-capita savings rates

7. Regional Economic and Housing Data

- Retail sector such as total retail sales and business bankruptcies
- Revenues by industries that gambling may have a large impact on such as: leisure, hotel, restaurant, and traditional gambling
- Regional variables such as GDP, investment, housing starts, value of residential and commercial building permits, hotel and commercial starts

8. Regional Tourism Data

- Overnight trips made by local residents to other regions
- Visitors from other regions / provinces making overnight trips to local area (non-business)
- Visitors from outside of Canada making overnight trips to local area (non-business)

To avoid the complications researchers face when making value judgments, data could be categorized by type of impact, such as crime, economic, or public health. In the process, areas where resources are allocated and policy developed to minimize costs and maximize benefits will be highlighted. By tracking changes in these data fields, communities can decide the relevant tradeoffs they wish to make. For example, a retirement community may put more relative weight on crime indices and the effects of implementing crime prevention policies, while a rural community may put greater emphasis on economic development.

"Reducing the costs of a family break down or loss of life to a single monetary value is necessarily overly simplistic."
Hawke, 2000

4. COST-BENEFIT AND IMPACT STUDIES SHOULD HAVE A WELL-DEFINED REFERENCE GROUP UNDERLYING THEIR METHODOLOGY.

It is imperative for cost-benefit and impact studies to have a well-defined reference group underlying their methodology. While this is particularly relevant in shaping the outcome of cost-benefit and impact studies, it can be applied to any form of research that seeks to measure the effects of gambling on a given region. Without a well-defined reference group, the ability to account for the costs and benefits of gambling becomes more obscure. Additionally, researchers will be better able to focus their attention on a specific community or region, and in the process better identify where the costs and benefits of gambling fall. With gambling this is particularly relevant as many types of gambling venues attract patrons from outside of a region, and as elaborated on in previous sections, in the process can export social costs associated with gambling.

5. CONTINUALLY REVIEW THE EFFECTS OF GAMBLING AND THE SUCCESS OR FAILURE OF RELATED POLICIES.

It is important that the success of policies and effects of gambling are reviewed on a continual basis after gambling has been introduced to a community. Changes in community and economic data and social indicators after gambling has been established in a region should be noted and constantly evaluated. Once gambling has expanded, the direction of future policy should not be seen as wholly irreversible or inevitable. The direction of future policy may be dependent on whether gambling has satisfied the community health goals established when gambling was originally introduced. With greater availability of data and knowledge of where gambling's impacts are felt, all groups, as opposed solely to provincial regulators, will be able to provide sound input into the directions of future policies. ■

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Appendix A: Multipliers: To use or not to use?

Multipliers are often used to estimate the aggregate change in total economic impacts to an area that result from a change in expenditures associated with an economic activity. The actual derivation of a multiplier is a complex process that is the end result of measuring a variety of different impacts through the use of quantitative techniques. A numeric value greater than one, it measures the sum of the direct, indirect and induced effects occurring in response to an initial activity.

Using a casino as an example:
1. The direct effect measures the increase in income or employment that the introduction of a casino into a region would bring.
2. The indirect effect measures the additional purchases of output that are created in response to the casino, such as hotel rooms, restaurants, souvenirs.
3. The induced effect is economic activity created by a change in spending patterns that can result from increases in household income within a region.

Although the use of a multiplier in cost-benefit analysis can be a valuable tool, its incorrect use can yield misleading results. In many studies, multipliers are used to measure the economic benefits of a project but are not applied to the associated costs. This approach will create a bias in the study by over-weighing the benefits of a project.

The multiplier value selected often depends both on the amount of money to be spent on a study and the time to be spent on it. The process to calculate a multiplier can be very time consuming and expensive, as it requires a vast amount of data to calculate. Consequently, often the value of an economic multiplier is arbitrarily chosen and then applied to a study to measure the additional economic benefits to a region from an economic activity. Estimation of economic benefits and costs by this method will be imprecise at best. The value of a multiplier will tend to vary from region to region, and will depend on a multitude of independent factors such as the size of the region, savings, consumption rates, income, and employment levels. Without taking each of these factors into consideration within a cost-benefit study, the result most likely will contain a variety of shortcomings.

Multipliers have also been critiqued on the basis that they are quantitative values that have no significance as qualitative measures for ranking economic activity or industries in terms of their intrinsic worth to a community (Horton, 2001). All else equal, the lower the savings rate within a reference group, the higher the multiplier will tend to be, as more money is being spent and re-circulated among a community. The effect of this can be that certain industries with high levels of investment, such as ones that display high income levels, greater levels of investment in technology, and higher education may have low economic multipliers. However, they still can produce significant economic and non-economic benefits to regional and local economies that may not be incorporated and reflected in the analysis (Horton, 2001). The same reasoning can be applied to industries and projects where the benefits are social in nature and hard to quantify.

For gambling policy in Canada, the correct use of multipliers can in some cases work against a project's viability (Treasury, 1998). This may be the result when a gambling venue is introduced as an instrument of economic development to a region in a recession or to a remote area. In remote areas, the value of a multiplier tends to be relatively low as many goods and services that are produced to supply the potential project would originate from outside the community. In urban areas, with more dense populations, the opposite occurs. As the majority of goods and services that are produced to supply the project are produced within the community, the multiplier within the community will tend to be relatively high. If public investment, which is most likely obtained from tax revenues supported by the more prosperous urban areas having a relatively large economic multiplier, is used to fund a project in a rural or depressed region, multipliers can often make the project look worse than it otherwise would (Treasury, 1998).

Appendix B: Rational Addiction, Public Health and Cost-benefit Analysis

The prevalence of addiction and its implications have traditionally been the focus of psychologists and sociologists. In recent years, economists increasingly have begun to enter into public debates regarding the incidence and prevalence of addiction. To economists, addiction presents a contradiction. Whereby underlying economic assumptions see people as rational decision-makers, addictive behaviour often is seen as exhibiting an irrational quality. Prominent economists have developed a rational theory of addiction to argue that in the presence of addiction people do tend to display a consistent plan to maximize their own welfare over time (Becker, 1998). While people may display moderate idiosyncrasies that are not rational, it is argued that overall a broad rational trend in their decision to take part in an addictive behaviour exists (Becker, 1998).

While the model is highly technical and relies on many assumptions, empirical tests have confirmed that that in many cases the rational addiction model is robust with substantial predictive power (Walker, 1999). Additional implications of the rational addiction model are that people will tend to end strong addictions with "cold turkey" measures to quit. It is also implied that people who discount future states of welfare heavily are more likely to become addicted to a substance or activity (Becker, 1998).

As applied to gambling, the rational addiction model would see the decision of whether or not to initially gamble as a rational choice, the risk of addiction being a factor of the initial decision (Walker, 1999). The implications of this mode of thought for cost-benefit studies are that decreases in personal income and medical costs due to problem gambling should not be seen as social costs. Adverse consequences of addiction that a person may experience are not seen as a social cost, but are instead a product of a calculated risk that a person chose to take when they first decided to gamble. Any reduction in quality of life experienced by a pathological gambler under the rational addiction model should therefore not be recorded as a social cost (Walker, 1999). In Canada, however, a stronger case could be made that the health care costs of treating problem gambling are, in fact, legitimate social costs because the financial consequences of treating problem gambling are primarily borne by the majority.

Most cost-benefit studies in the current gambling literature and gambling policies in general take a public health approach to problem gambling, and in the process tend to discount the rational addiction model. It is important to note that the rational addiction model centers on the decisions of individuals as opposed to society as a whole. If the actions of a problem gambler only impacted him personally, policies to prevent problem gambling may be viewed by society as paternalistic. However, the impacts of problem gambling are not limited to the problem gambler but affect families and communities as a whole. As gambling addiction creates costs external to the problem gambler, policies to reduce the incidence of problem gambling are seen to have a place in the public realm.

Many decisions made by public health decision-makers, such as limiting forms of gambling and preventing smoking and drinking in public places, are seen as a tradeoff between the right of individual choice and the goal of minimizing costs. In all societies there exists some tradeoff with an individual's freedom in order to reduce broader harm to society. Public health policy in some cases does choose to limit individual freedoms in order to reduce harm to society as a whole (Charlton, 2000). While a public health perspective may conflict with the perspective of the individual, if a primary concern is to focus on harm minimization to society as a whole, this is often seen as a necessary trade-off. The cost of reducing the prevalence of problem gambling therefore does have a role within cost-benefit and impact studies, even if problem gambling is seen as an outcome of a rational choice.

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